

IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the Application:

LISTING OF CLAIMS:

1. (Currently Amended) In a computer, a method for obtaining resource usage information from a node of a network, the method comprising the steps of:
 - generating, for a data element, a value for a parameter within the data element that will cause the node of the network to determine that the data element is stale when the node of the network receives the data element;
 - sending the data element to the node of the network, wherein the step of sending the data element to the node includes the step of providing, within the data element, a destination address which targets a device that is different than the node to route the data element in a direction leading to the device through the node; and
 - receiving a signal from the node of the network, the signal including (i) an indication that the node of the network has removed the data element from the network, and (ii) resource usage information describing usage of resources within the node of the network, wherein the step of receiving the signal includes the step of obtaining, as the signal, a packetized communication having a history which identifies processing of the data element as a non-stale data element by the node even though the data element is stale by the time the node receives the data element.

2. (Currently Amended) The method of claim 1 wherein the node of the network (i) includes multiple resources and (ii) is capable of processing non-stale data elements using different combinations of the multiple resources, and wherein the ~~step of receiving includes the step of: acquiring, as the resource usage information, a history which~~ identifies a combination of the multiple resources that processed the data element as a the non-stale data element.
3. (Currently Amended) The method of claim 1 wherein the parameter within the data element is a Time-To-Live field, the contents of which identify a limit to the number of remaining nodes which can process the data element within the network, wherein the signal is an Internet Control Message Protocol error message, and wherein the packetized communication further has ~~step of receiving includes the step of: acquiring, as the indication that the node of the network has removed the data element from the network,~~ a notification that the limit to the number of remaining nodes which can process the data element within the network has been reached.
4. (Original) The method of claim 1 wherein the computer includes a database, and wherein the method further comprises the step of:
 - extracting the resource usage information from the signal;
 - updating contents of the database with the extracted resource usage information; and
 - tuning the node of the network based on the updated contents of the database.

5. (Currently Amended) An apparatus for obtaining resource usage information from a node of a network, comprising:

a network interface for connecting to the network; and
a controller coupled to the network interface, the controller being

configured to:

generate, for a data element, a value for a parameter within the data element that will cause the node of the network to determine that the data element is stale when the node of the network receives the data element,

send the data element to the node of the network through the network interface, wherein the controller, when sending the data element to the node, is configured to provide, within the data element, a destination address which targets a device that is different than the node to route the data element in a direction leading to the device through the node, and

receive a signal from the node of the network, the signal including (i) an indication that the node of the network has removed the data element from the network, and (ii) resource usage information describing usage of resources within the node of the network, wherein controller, when receiving the signal, is configured to obtain, as the signal, a packetized communication having a history which identifies processing of the data element as a non-stale data element by the node even though the data element is stale by the time the node receives the data element.

6. (Currently Amended) The apparatus of claim 5 wherein the node of the network (i) includes multiple resources and (ii) is capable of processing non-stale data elements using different combinations of the multiple resources, and wherein the ~~controller includes:~~
circuitry that acquires, ~~as the resource usage information,~~ a history which identifies a combination of the multiple resources that processed the data element as a non-stale data element.
7. (Currently Amended) The apparatus of claim 5 wherein the parameter within the data element is a Time-To-Live field, the contents of which identify a limit to the number of remaining nodes which can process the data element within the network, and wherein the packetized communication further has ~~signal is an Internet Control Message Protocol error message, and wherein the controller includes: circuitry that acquires, as the indication that the node of the network has removed the data element from the network,~~ a notification that the limit to the number of remaining nodes which can process the data element within the network has been reached.
8. (Original) The apparatus of claim 5 further comprising:
a memory, coupled to the controller, which stores a database, wherein the controller is configured to:
extract the resource usage information from the signal;
update contents of the database with the extracted resource usage information; and
tune the node of the network through the network interface based on the updated contents of the database.

Claims 9-10 (canceled).

11. (Currently Amended) In a node of a network, a method for providing resource usage information, the method comprising the steps of:

receiving a data element from a source computer of the network, wherein the step of receiving the data element includes the step of obtaining, within the data element, a destination address which targets a device that is different than the node to route the data element in a direction leading to the device through the node;

determining that the data element is stale based on a parameter within the data element; and

removing the data element from the network and sending a signal to the source computer of the network, the signal including (i) an indication that the node of the network has removed the data element from the network, and (ii) resource usage information describing usage of resources within the node of the network, wherein the step of removing the data element from the network and sending the signal includes the step of providing, as the signal, a packetized communication having a history which identifies processing of the data element as a non-stale data element by the node even though the data element is stale by the time the node receives the data element.

12. (Currently Amended) The method of claim 11 wherein the node of the network (i) includes multiple resources and (ii) is capable of processing non-stale data elements using different combinations of the multiple resources, and further comprising the steps of:

after the step of determining, processing the data element as a the non-stale data element using a combination of the multiple resources; and

generating, as the resource usage information, a the history which identifies the combination of the multiple resources that processed the data element as a the non-stale data element.

13. (Original) The method of claim 11 wherein the parameter within the data element is a Time-To-Live field, the contents of which identify a limit to the number of remaining nodes which can process the data element within the network, wherein the step of determining includes the step of:

updating a value defined by the contents of the Time-To-Live field of the data element to determine that the limit to the number of remaining nodes which can process the data element within the network has been reached, and

wherein the step of removing and sending includes the step of:

providing, as the signal to the source computer of the network, an Internet Control Message Protocol error message.

14. (Original) The method of claim 11 wherein the node of the network is capable of processing data elements based on a tuning attribute, and wherein the method further comprises the steps of:

receiving, from the source computer, a tuning command based on the resource usage information; and

adjusting the tuning attribute based on the tuning command in order to change a manner in which the node processes data elements.

15. (Currently Amended) A network node for providing resource usage information, comprising:

a network interface for connecting to a network; and

a controller coupled to the network interface, the controller being configured to:

receive a data element from a source computer of the network through the network interface, wherein the controller, when receiving the data element, is configured to obtain, within the data element, a destination address which targets a device that is different than the node to route the data element in a direction leading to the device through the node;

determine that the data element is stale based on a parameter within the data element; and

remove the data element from the network and send a signal to the source computer of the network through the network interface, the signal including (i) an indication that the node of the network has removed the data element from the network, and (ii) resource usage information describing usage of resources within the node of the network, wherein the controller, when removing the data element from the network and sending the signal, is configured to provide, as the signal, a packetized communication having a history which identifies processing of the data element as a non-stale data element by the node even though the data element is stale by the time the node receives the data element.

16. (Currently Amended) The network node of claim 15 wherein the controller includes:
- multiple resources; and
 - a control module, coupled to the multiple resources, which is capable of processing non-stale data elements using different combinations of the multiple resources, the control module being configured to:
 - process the data element as a the non-stale data element using a combination of the multiple resources, and
 - generate, as the resource usage information, a the history which identifies the combination of the multiple resources that processed the data element as a the non-stale data element.
17. (Original) The network node of claim 15 wherein the parameter within the data element is a Time-To-Live field, the contents of which identify a limit to the number of remaining nodes which can process the data element within the network, and wherein the controller includes:
- circuitry that (i) updates a value defined by the contents of the Time-To-Live field of the data element to determine that the limit to the number of remaining nodes which can process the data element within the network has been reached, and (ii) provides, as the signal to the source computer of the network, an Internet Control Message Protocol error message.
18. (Original) The network node of claim 15 wherein the controller is capable of processing data elements based on a tuning attribute, and wherein the controller includes:
- circuitry that (i) receives, from the source computer through the network interface, a tuning command based on the resource usage information, and (ii) adjusts the tuning attribute based on the tuning command in order to change a manner in which the controller processes data elements.

Claims 19-24 (Canceled).

25. (Previously Added) The method of claim 1 wherein the node is an intermediate device disposed between the computer and a target device, and wherein the step of sending the data element to the node includes the step of:

formatting the data element as a packet having (i) a destination address that identifies the target device and (ii) a Time-To-Live value which causes the node to consider the data element to be a stale packet upon receipt of the data element by the node.

26. (Previously Added) The apparatus of claim 5 wherein the node is an intermediate device disposed between the apparatus and a target device; and wherein the controller, when sending the data element to the node, is configured to:

format the data element as a packet having (i) a destination address that identifies the target device and (ii) a Time-To-Live value which causes the node to consider the data element to be a stale packet upon receipt of the data element by the node.

Claim 27 (canceled).

28. (Previously Added) The method of claim 11 wherein the node is an intermediate device disposed between the source computer and a target device; and wherein the step of receiving includes the step of:

obtaining, as the data element, a packet having (i) a destination address that identifies the target device and (ii) a Time-To-Live value which causes the node to consider the data element to be a stale packet.

29. (Previously Added) The network node of claim 15 wherein the node is an intermediate device disposed between the source computer and a target device; and wherein controller, when receiving the data element, is configured to:
- obtaining, as the data element, a packet having (i) a destination address that identifies the target device and (ii) a Time-To-Live value which causes the network node to consider the data element to be a stale packet.

Claims 30-42 (canceled).